



# ESSAY WRITING AMONG PRE-UNIVERSITY MEDICAL STUDENTS: CRITICAL THINKING OR READY MADE STRUCTURE?

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## ABSTRACT

A major part of a formal education, in recent years, is essays. Secondary students are taught structured essay formats to improve their writing skills, and admission essays are often used by universities in selecting applications. Essays are used to judge the mastery and comprehension of material in both secondary and tertiary education, therefore students are asked to explain, comment on, or assess a topic of study in the form of an essay. This study examined the critical thinking ability of pre-university medical students and its relationship to language proficiency especially in second language writing. The objectives of this study were to investigate the level of critical thinking by evaluating participants' essay based on The Holistic Critical Thinking Scoring Rubric (HCTSR), (Facione & Facione, 1994) by two experienced English teachers. The study is based on a document analysis of 100 essays written by Foundation in Science (FIS) and Foundation in Allied Science (FAS) students at one of medical private university colleges in Malaysia. The findings showed that critical thinking levels among students are radically low. The researcher believes that this study can create the way forward to replacing the old cycle of transmission pedagogy with critical thinking pedagogy in language education

**KEYWORDS:** critical thinking, essay writing, pre-university medical student, second language writing.

## INTRODUCTION:

Recognised as a skill of enduring importance, critical thinking has been listed among the key components of educational objectives of many countries across the world including United Kingdom (Russel, 2000), Australia (Department of Education and Training, 2006), New Zealand (Ministry of Education, 2005; 2007), Singapore (Goh, 1997) and Malaysia (Radin Umar, Saleh, Wahid, Jamaluddin, Haslinda & Nor Azizah, 2006). In the Malaysian context, the need of developing critical thinking among the students is evident. According to Hashim and Hussein (2003), despite six years of primary and five years of secondary education, students fail to apply the content knowledge learnt at school into real-life situations. Rosnani and Suhailah (2003) and Konting *et al.*, (2007) also share the same that after eleven years of school, students are still unable to apply critical thinking in their schools or real world situation. The Malaysian National Higher Education Research Institute (NHEM, 2003) conducted a study of unemployment problems among graduates. The study on 561 unemployed respondents showed that the respondents generally believed that they were well qualified and met all the requirements of the regular job market; however, their applications have been turned down due to the lack of critical thinking skills. Such a situation might be due to the lack of possibility given to the students to employ critical thinking in class due to the learning and teaching approach of Malaysian education system.

Critical thinking is also acknowledged as a desirable outcome in many health sciences educational programs. The Standards for Accreditation of Medical Education Programs Leading to the M.D. Degree state that medical students should "acquire skills of critical judgment based on evidence and experience" (Liaison Committee on Medical Education, 2012, p. 7). The Accreditation Council for Pharmacy Education Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree state that teaching and learning methods should foster the "development and maturation of critical thinking and problem-solving skills" (Accreditation Council for Pharmacy Education, 2011, p.20). The fact that nearly all health sciences programs recognize the importance of developing critical thinking skills is not surprising. Medical students must use critical-thinking skills to relate basic concepts to real-life situations during their pre-clinical courses. They eventually need to develop good clinical reasoning and decision making skills to provide safe and effective care to patients. Lives depend on competent clinical reasoning, and critical thinking and reflective problem solving are cognitive processes which are involved in clinical reasoning (Facione & Facione, 2008).

The close relationship between thinking skills and language has long been recognised by many great scholars such as Piaget (1971) and Vygotsky (1962). Dixon, Cassady, Cross, & Williams (2005) emphasise that writing is a vehicle through which students can express their critical thinking, and that writing seems to be an expression of critical thinking when students are trained to use critical thinking methods consistently in writing. Sorrell, Brown, Silva and Kohlenberg (1997) clarify that writing requires one "[t]o connect ideas from internal and external sources, critically think about the ideas, and then infer a generalisation that gives the separate pieces of information a coherent verbal shape" (p. 14). Bean (2001) asserts that writing "requires analytical or argumentative thinking and is charac-

terized by a controlling thesis or statement and a logical, hierarchical structure" (p. 17). Similarly, Schafersmen (1991) explains that "writing forces students to organize their thoughts, contemplate their topic, evaluate their data in a logical fashion, and present their conclusions in a persuasive manner" (p. 7). Good writing is therefore a reflection of good critical thinking. The sources of ideas can be from across a variety of texts and those based on observation, experience and reflection (Vardi, 1999). Hence, critical thinking in academic writing is a manifestation of an author's ability to:

i) understand and analyse the ideas; ii) evaluate and synthesise the arguments in a variety of sources before making any conclusions; iii) and then presenting them clearly to an audience.

It entails the ability to: understand key concepts and ideas; distinguish the main ideas and arguments from the subordinate ones; judge their relevance and provide reasons; judge the credibility of sources of information; and be able to paraphrase them and later draw conclusions based on all the justifications made.

It is important for the university authorities to be informed of the critical thinking level of their undergraduates. At present, due to insufficient amount of empirical evidence forwarded, the general critical thinking ability of pre-university medical sciences students is still not that transparent. Also, research on critical thinking in relation to second language learning is still in its infancy stage. Studies on the relationship between critical thinking and writing skill especially those which use second language learners as the sample are still not sufficient.

## MATERIALS AND METHODS:

### Participants:

Participants included 100 Malay students (30 males and 70 females) who attended Foundation in Science (FIS) and Foundation in Allied Science (FAS) programmes at one of medical private universities in Malaysia. The mean age of the participants is 19. The participants of this study were learners leading to medical and pharmacy programmes and have taken three compulsory English communication skills development courses that cover oral and written academic discourse in task-based discussion and research development for three semesters. This group was chosen because they had undergone at least three semesters of pre-university education which was deemed as an adequate period to have had the students exposed to the kind of learning at the tertiary level which promotes the development of critical thinking. The participants of the present study were then divided into three different English proficiency levels: Excellent (N=73), Good (N=15), Fair (N=12). A stratified sampling technique was employed in the study to ensure that the sample used is representative of the target population. The undergraduates were selected based on their grades in the SPM English, a national-level examination. The rather small number of under graduates in the Excellent group compared to that in the Fair proficiency group reflects that majority of the participants were highly proficient in English.

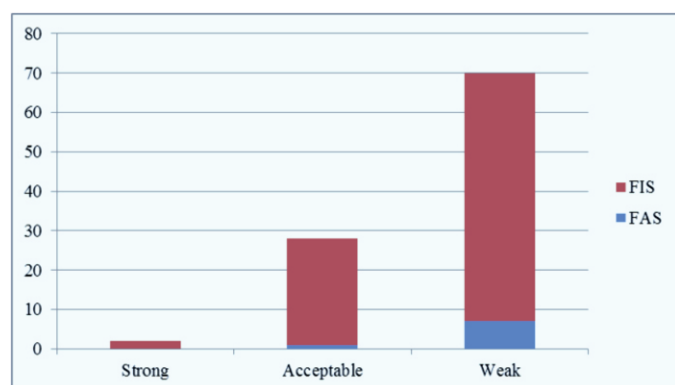
### Instrument:

In this research, a qualitative approach was employed as a means in collecting the data. The study is based on a document analysis of 100 essays written by partici-

pants based on a standard essay prompt. Various instruments are available to assess critical thinking (Watson and Glaser, 1980 blue right-pointing triangle; Ennis and Weir, 1985 blue right-pointing triangle; Facione, 1990b blue right-pointing triangle; Center for Critical Thinking and Moral Critique, 1996 blue right-pointing triangle) but this research employs *The Holistic Critical Thinking Scoring Rubric (HCTSR)*, (Facione & Facione, 1994). This instrument was chosen on the basis of it focuses on assessing evidence of critical thinking, rather than evaluating writing. In this study, two experienced English teachers were appointed as raters to evaluate each essay. Each essay was scored at least three times, with each rater unable to see any previous score. A 'mask' was used to conceal the significance of prior raters' scores. At any juncture where the two raters disagree with each other's, a conversation between the two raters regarding their evaluations will be conducted. Discrepancies of more than one level between raters indicate that the raters must review together the evidence considered salient by each rater. This rubric is a four level scale, forced choice scale. Half point and 'middle of the two' scoring is not possible. The only variation which would be consistent with this tool is to combine level 1 and 2 so that this became a three level scale: Strong, Acceptable, Weak.

## RESULTS AND DISCUSSION:

The objective of this study was to examine the critical thinking ability of pre-university medical students and its relationship to language proficiency especially in second language writing. The findings showed that critical thinking levels among students are radically low. Diagram 1 below illustrates the critical thinking level in essay writing among participants based on the Holistic Critical Thinking Scoring Rubric (HCTSR), for both programmes.



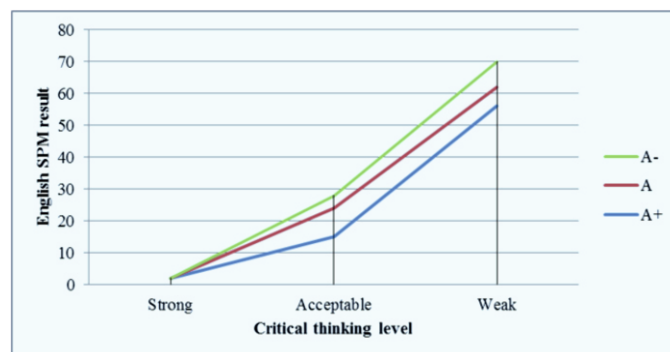
**Diagram 1: Critical thinking level in academic writing among participants based on HCTSR**

Although the rather small number of students in the Poor group compared to that in the Excellent proficiency group reflects that majority of the participants were highly proficient in English, a large number of our students do not appear to be able to respond critically in their writing to the information that they are exposed to and to move on to create new ideas and new perspectives. In their essay, most of the participants do not know how to sift facts from opinion, make a clear written argument or objectively review conflicting reports of a situation or event. It was discovered that there were limited instances in their essay where the respondents refers to the available evidence, evaluates the validity of that evidence, and assesses what contribution it can realistically make to the topic assigned to them.

Tertiary writing differs from secondary school writing by requiring tertiary students to produce writing a more critical academic nature. Students should forget some basic rules they have learnt in high school because these rules will limit their freedom. Even though most students know about classical essay types (descriptive, expository, cause and effect, compare and contrast and argumentative), our astonishing results demonstrate that all students who participated in our study were unable to evaluate and synthesise arguments in a variety of sources before making any conclusions; understand key concepts and ideas; distinguish the main ideas and arguments from the subordinate ones; judge their relevance and provide reasons; judge the credibility of sources of information; and be able to paraphrase them and later draw conclusions based on all the justifications made. In addition, it was also evident that the participants were incapable to present their ideas clearly to audience by using the appropriate academic voice. Academic essay writing requires well-organised research as mentioned earlier in this paper. The analysis is very crucial bringing an interesting approach why students especially struggle during their undergraduate study. Therefore, tertiary-level ESL students need to be guided and trained to think critically when writing and given ample time to practice writing. This also suggests that the critical thinking ability of university students do need to be further analysed if any pedagogical aspects of the university is to be improved.

In an Asian context, most students have not engaged in academic discourse in their formal writing courses during secondary school education, and are often introduced to academic writing at university. The researchers believe that both context and inadequacies of English language proficiency compound the academic writing difficulties experienced by ESL students at tertiary levels.

Although most of the participants have a sound understanding of grammar rules, most of them were unable to write academically at levels expected of them. Diagram 2 below shows the association between the participants' English SPM results critical thinking level in academic writing based on the Holistic Critical Thinking Scoring Rubric.



**Diagram 2: Association between the participants' English SPM results critical thinking level in academic writing**

From the data obtained, there was no significance between participants' English SPM results with their critical thinking level at tertiary education. As stipulated in the participants' demographic data, the majority of our participants obtained A+ in their English SPM (N=73) whilst the remaining are A (N=15) and A- (N=12). An A+ grade is considered a super distinction and was the highest possible grade, which meant students would have scored more than 90% in the subject. Nevertheless, the data revealed that the many problems students face in writing concern not only their weaknesses in the language but, more importantly, their inability to think critically when writing, which contributes to their poor writing performance.

## CONCLUSION:

This study was implemented on the basis of The Holistic Critical Thinking Scoring Rubric (HCTSR), (Facione & Facione, 1990). The findings of the present study imply that more work needs to be done towards upgrading the critical thinking ability among pre-university medical students. Institutions involved in training health professionals are permanently concerned with improving the quality of their graduates for meeting healthcare demands. Critical thinking is a core skill that medical students should acquire and demonstrate during their undergraduate study. Medical sciences students must use critical-thinking skills to relate basic concepts to real-life situations during their pre-clinical courses. They eventually need to develop good clinical reasoning and decision making skills to provide safe and effective care to patients. Lives depend on competent clinical reasoning and critical thinking and reflective problem solving are cognitive processes which are involved in clinical reasoning.

The observed facts that the participants in this study did not have critical thinking ability level equivalent to that of their western counterparts and that the majority of them were highly proficient in English are irrefutably shocking. Malaysian Ministry of Education needs to upgrade the standard of English at school, include critical thinking in the curriculum and promote assessments with emphasis on higher order thinking.

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